

## **CLAIMS**

What is claimed is:

1. (Currently Amended) A contactless sheet resistance measurement apparatus for measuring sheet resistance comprising:
  - a light source for illuminating the area of a semiconductor structure with an intensity modulated light,
  - a transparent conducting electrode optically coupled with the light source and used for detecting photovoltage signals inside the illuminated area,
  - a first non transparent conducting electrode used for detecting photovoltage signals outside of the illumination area, and
  - a second non transparent conducting electrode connected to a ground and installed between the transparent and first non transparent electrodes.
2. (Withdrawn)
3. (Withdrawn)
4. (Currently Amended) The apparatus of claim 1, wherein the transparent conducting electrode is a glass or quartz disk with an ITO coating and the first non transparent electrode is a metal ring coaxially installed to the glass or quartz disk.
5. (Currently Amended) The apparatus of claim 1, wherein the transparent and conducting electrode is a glass or quartz disk with an ITO coating and the first non transparent electrode is a part of the metal ring coaxially installed to the glass or quartz disk.

20. (New) The apparatus of claim 4, wherein the second non transparent electrode connected to the ground is a metal ring coaxially installed between the glass or quartz disk with an ITO coating and the first non transparent electrode.
21. (New) The apparatus of claim 5, wherein the second non transparent electrode connected to the ground is a part of the metal ring coaxially installed between the glass or quartz disk with an ITO coating and the first non transparent electrode.
22. (New) The apparatus of claims 4, 5, 20, or 21 wherein the illumination means comprises a light emitting diode and an optical fiber directing light onto the wafer surface.
23. (New) The apparatus of claims 4, 5, 20, or 21, wherein the illumination means comprises a laser and an optical fiber directing light onto the wafer surface.